

REMARKS

Claims 1-42 are pending in the present Application with Claims 25-40 and 42 withdrawn from consideration. No claims have been canceled, amended, or added, leaving Claims 1-24 and 41 for consideration upon entry of the present Amendment.

Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-17, 20-24 and 41 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by WO 97/15935 to Shibuta ("Shibuta"). (Office Action dated 03/13/2007, page 2) Applicants respectfully traverse this rejection.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

The present claims are directed to a composition comprising, *inter alia*, a polymeric resin, a nanosized dispersion agent that is electrically non-conducting, and carbon nanotubes.

In making the § 102(b) rejection, the Examiner has stated that Shibuta teaches a composition that contains metal oxides, which are equivalent to the compositions that are claimed and disclosed in the Applicant's specification. (Office Action dated 03/13/2007, page 3) The Applicants respectfully traverse this rejection.

Shibuta teaches an electrically conductive polymer composition comprising a moldable polymer, hollow carbon microfibers, and an electrically conductive white powder such as TiO₂ powder coated with antimony-doped tin oxide, or aluminum-doped zinc oxide powder.

(Abstract)

In further explanation of the rejection, the Examiner has stated that he is "unclear as to where Applicant believes the metal oxides of Shibuta are coated with a conductive surface *inter alia* and has found no support for the statements that the said metal oxides from Shibuta are coated with any conductive surfaces." (Office Action dated 03/13/2007, pages 3-4)

The following is taken from Shibuta (WO97/15934), describing the types of electrically conductive white powder that can be used in the composition of Shibuta:

The electrically conductive white powder used in this invention can be (1) a white powder which itself is electrically conductive, or (2) a non-conductive white powder the surface of which is coated with a transparent or white electrically conductive metal oxide (referred to below as a surface coated conductive white powder).

(Page 7, lines 29-34)

An example of (1) is a white metal oxide powder, the electrical conductivity of which is increased by doping with another element. [S]pecific examples include aluminum-doped zinc oxide (abbreviated as AZO), antimony-doped tin oxide (abbreviated as ATO), and tin-doped indium oxide (abbreviated as ITO).

(Page 7, line 35 – page 8, line 2)

Examples of surface-coated conductive white powder (2) are nonconductive white powders such as titanium oxide, zinc oxide, silica, aluminum oxide, magnesium oxide *inter alia* with the surface thereof coated with a transparent or white electrically conductive metal oxide such as ATO, AZO, or ITO. (Page 8, lines 9-16) ATO and AZO are preferred as the conductive metal oxide for surface coating because they have good covering properties.

(Page 8 lines 14-16)

In making the § 102(b) rejection, the Examiner has also stated, that “Shibuta teaches a composition that contains a polymeric resin, nanotubes and metal oxides which are equivalent to the compositions that are claimed and disclosed in the Applicant’s specification”. (Office Action dated 03/13/2007, page 3) As shown above, the metal oxides of Shibuta are modified to be electrically conductive either through doping of the metal oxide or, by coating the non-conductive metal oxide with one that has already been modified to be conductive. The metal oxides used in the present invention however, have not been modified as described above and, they are not electrically conductive. Thus, the Applicants contend that metal oxides of Shibuta are not equivalent to the metal oxides of the present invention. Therefore, Shibuta does not teach an electrically conductive composition comprising a polymeric resin and a nanosized dispersion agent that is electrically non-conducting, as in independent Claim 1. Since Shibuta does not teach all elements of the present invention, Shibuta cannot anticipate the claims of the present invention. Reconsideration and withdrawal of this rejection are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 4-8 and 11-14 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Patent Application No. WO 97/15935 to Shibuta (Shibuta) in view of the Applied Nanotech Inc. (ANI) webpage (<http://www.applied-nanotech.com/cntproperties.htm>). (Office Action dated 03/13/2007, page 2) Applicants respectfully traverse this rejection.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

In making the § 103(a) rejection, the Examiner has cited claims 4-8 and 11-14 as allegedly unpatentable over Shibuta. As the present invention contains only one independent claim (Claim 1), all of the subsequent dependent claims, either directly or indirectly, contain the limitations of independent claim 1. As discussed above, Shibuta fails to disclose all elements of instant Claim 1, therefore Shibuta cannot anticipate all of the elements of the dependent claims.

There is also no motivation to modify Shibuta because Shibuta teaches away from the present claims. Shibuta teaches the use of electrically conductive particles to improve the conductivity of polymer compositions. Based on Shibuta, one of ordinary skill in the art would not be motivated to substitute the modified, conductive particles of Shibuta with the unmodified, non-conductive nanosized particles of the present invention. Additionally, there would be no reasonable expectation of success.

With regard to the ANI webpage, which teaches a summary of the common physical parameters of carbon nanotubes, one skilled in the art would not be motivated to combine this reference with Shibuta. The ANI webpage does not teach the use of an electrically non-conductive nanosized dispersion agent in a polymer composition, the limitation cited in independent claim 1 and inherent in dependent claims 4-8 and 11-17. Therefore, the ANI

webpage does not make up for the deficiencies of Shibuta and consequently, there would be no motivation to combine references.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness over Shibuta in view of the ANI webpage. Reconsideration and withdrawal of this rejection are respectfully requested.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the objection(s) and rejection(s) and allowance of the case are respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-1131.

Respectfully submitted,

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